

1. A time slot and carrier allocation method for time division multiple access (TDMA) multiple carrier communications, comprising:

determining from a tone map that first and second time slots are generally allocated to a first and a second receiver respectively;

5 determining that a carrier is unused during the first time slot; and

transmitting a new tone map to the first and second receivers that specifies that the unused carrier is to be reallocated to the second receiver.

2. The time and carrier allocation method according to claim 1, further comprising transmitting a data stream to the second receiver using the reallocated carrier.

3. The time and carrier allocation method according to claim 1, wherein a first stream of data is transmitted to the first receiver and wherein the first stream of data comprises audio/video data.

4. The time and carrier allocation method according to claim 1, wherein the communication system comprises an Orthogonal Frequency Division Multiplexed TDMA communication system.

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5. An electronic storage medium storing instructions which, when executed on a programmed processor, carry out a time slot and carrier allocation method according to claim 1.

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6. A time slot and carrier allocation method for time division multiple access (TDMA) multiple carrier communications, comprising:

determining from a tone map that a first time slot is generally allocated to a first receiver for receipt of a single stream of data for each time slot usage;

5 determining that a carrier is unused during the first time slot;

determining that a second stream of data is to be sent to the first receiver; and

transmitting a new tone map to the first receiver that specifies that the unused carrier is to be reallocated to the second stream of data.

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7. The time and carrier allocation method according to claim 6, further comprising transmitting the second stream of data to the first receiver using the reallocated carrier.

15 8. The time and carrier allocation method according to claim 6, wherein the second stream of data comprises a control data stream.

9. The time and carrier allocation method according to claim 6, wherein the first stream of data comprises audio/video data.

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10. The time and carrier allocation method according to claim 6, wherein the first and second streams of data each comprise one of audio/video data or control data.

25 11. The time and carrier allocation method according to claim 6, wherein a number of unused carriers reallocated to the second stream of data is less than a specified maximum.

12. The time and carrier allocation method according to claim 6, wherein the
30 specified maximum comprises 10% of available carriers.

13. The time and carrier allocation method according to claim 6, wherein the communication system comprises an Orthogonal Frequency Division Multiplexed TDMA communication system.
- 5 14. The time and carrier allocation method according to claim 6, wherein the new tone map specifies that the unused carrier is to be reallocated to a plurality of other streams of data.
- 10 15. An electronic storage medium storing instructions which, when executed on a programmed processor, carry out a time slot and carrier allocation method according to claim 6.

16. A time slot and carrier allocation method for time division multiple access (TDMA) multiple carrier communications, comprising:

determining from a tone map that first and second time slots are generally allocated to a first and a second receiver respectively;

5 determining from the tone map that the first and second receivers are able to receive using a common set of carriers;

determining that a single data stream is to be transmitted to the first and second receivers; and

10 transmitting a new tone map to the first and second receivers that specifies that the first and second receivers are to receive the single data stream using the common set of carriers during one or more designated time slots.

17. The time and carrier allocation method according to claim 16, further comprising transmitting the single data stream using the common set of carriers
15 during the designated time slots.

18. The time and carrier allocation method according to claim 16, wherein the number of common carriers is greater than a threshold number of available carriers.
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19. The time and carrier allocation method according to claim 18, wherein the threshold number comprises approximately 50% of available carriers.

20. The time and carrier allocation method according to claim 16, wherein the
25 number of common carriers is less than a threshold number of available carriers; and wherein the tone map designates that the first and second receivers receive the single data stream using merged time slots.

21. An electronic storage medium storing instructions which, when executed
30 on a programmed processor, carry out a time slot and carrier allocation method according to claim 16.

22. A time slot and carrier allocation method for time division multiple access (TDMA) multiple carrier communications, comprising:

determining if a time slot is available, and if so assigning a stream of data destined for a specified receiver to the time slot;

5 if no time slot is available, determining if a time slot having the same destination is available; and

if a time slot having the same destination is available, assigning a carrier in the time slot to the stream of data.

10 23. The time and carrier allocation method according to claim 22, further comprising:

if no time slot is available having the same destination, determining if another time slot is available and if so assigning a carrier in the another time slot.

15 24. The time and carrier allocation method according to claim 22, further comprising:

determining if a reassignable data stream exists;

If a reassignable data stream exists, stopping the stream;

assigning a carrier to the stream of data destined for the receiver; and

20 reassigning the carriers designated for the reassignable data stream.

25 25. An electronic storage medium storing instructions which, when executed on a programmed processor, carry out a time slot and carrier allocation method according to claim 22.

26. A time slot and carrier allocation method for time division multiple access (TDMA) multiple carrier communications, comprising:

determining if a number of commonly used carriers between two or more receivers is greater than a threshold number of carriers;

5 if so, calculating a number of time slots as a carriers divided by the number of commonly used carriers;

assigning the time slots to the receivers; and

assigning a stream of data to the common carriers.

10 27. The time and carrier allocation method according to claim 26, further comprising:

if the number of commonly used carriers is less than the threshold number of carriers calculating a number of slots as a fraction of a previously assigned number of slot numbers;

15 assigning the time slots to the receivers; and

assigning a stream of data to the common carriers.

28. The time and carrier allocation method according to claim 26, further comprising transmitting a tone map that specifies the assigned common carriers
20 and the time slots.

29. The time and carrier allocation method according to claim 26, wherein the threshold comprises 50% and wherein the fraction comprises one half.

25 30. An electronic storage medium storing instructions which, when executed on a programmed processor, carry out a time slot and carrier allocation method according to claim 26.